Carbon coking behaviour over anodes subjected to different conditions

A B C

Supplementary Figure. 5 Optical images of fuel cell anodes after exposure to various gas mixtures for selected periods of time at ~ 600 ^{o}C (cell temperature), (A) Ru+CeO_2 catalyst layer coated anode after pre-treated at ~580 ^{o}C for more than 200 h under a gas composition of 40 ml.min^{-1} C_3H_8+90 ml.min^{-1} O_2+360 ml.min^{-1} He (all at STP), (B) Ni+SDC anode after exposed to the same gas mixture at ~600 ^{o}C for 24 h, (C) Ni+SDC anode after exposure to pure propane for several minutes at 600 ^{o}C. The oxygen in the gas mixture together with the Ru+CeO_2 successfully suppressed carbon coking on the Ru+CeO_2 treated anode.